

USING FEAR MESSAGES AND SCARE TACTICS IN SUBSTANCE ABUSE PREVENTION EFFORTS

Scare tactics—dramatized messaging designed to shock and frighten—were one of the earliest strategies employed to reduce substance use among youth. This strategy, often featuring horror stories, gruesome images, and graphic messaging intended to elicit fear, initially gained popularity as a response to the drug culture of the 1960's.¹ Though used widely since, studies prove scare tactics ineffective in substance abuse prevention.

This document summarizes peer-reviewed research published between 1993 and 2014 on the use of scare tactics and fear messages in health communications to prevent substance abuse. It offers state and community-level prevention planners interested in developing health communications campaigns relevant and timely information on the effectiveness of these approaches, and factors to consider when implementing such efforts.

The Fine Print: Search Methods and Criteria for Inclusion

To identify the articles contained in this summary, we conducted a thorough search of the databases PSYCHINFO and PUBMED, using the following parameters:

- Key words that included *substance abuse, prevention, scare tactics, fear messages, fear appeals, threat appeals, and health communications*.
- Articles published between January 1993 and February 2014. This range of dates was dictated by available resources, as well as the view that more recent reviews would be more relevant for planning current prevention activities.

When our search yielded meta-analyses and systematic literature reviews, we consulted these to identify and review individual studies that met the criteria for inclusion.

Over 1,000 potential records of individual articles were identified and reviewed for inclusion. We then selected articles for inclusion based on the following criteria:

- The full text was available
- The article was published in a peer-reviewed journal
- The article included clearly identified methodologies and results
- The article discussed a study that used U.S. samples

¹ Prevention First (2008). *Ineffectiveness of Fear Appeals in Youth Alcohol, Tobacco and Other Drug (ATOD) Prevention*. Springfield, IL: Prevention First.

For each selected article culled from the sources listed above, we distilled the information pertinent to the use of scare tactics in substance abuse prevention efforts.

CAVEATS

- Most of the published literature in peer-reviewed journals addressing this topic used university student samples and were experimental studies versus studies of actual prevention interventions or programs.
- Most of the published literature on scare tactics and fear messages investigated media tactics such as public service announcements. No peer-reviewed research investigating sensationalized or staged events (e.g., mock car crashes, grim reaper events) was identified.
- Strategies that remain unpublished in a peer-reviewed journal are not included in this review.
- Articles reporting the use of scare tactics and fear appeals messages for health behaviors other than the prevention of substance use (alcohol, illicit drugs, and tobacco) are not included in this review.
- The detailed summaries display key, relevant considerations and major findings for included studies. For more detailed information, we encourage you to review the full text articles or to consult with your evaluator.

Detailed Summaries

Lee, M. J., & Ferguson, M. A. (2002). Effects of anti-tobacco advertisements based on risk-taking tendencies: Realistic fear vs. vulgar humor. *Journalism & Mass Communication Quarterly*, 79(4), 945-963.

Intervention (including specific scare tactics or fear messages)	<p>Participants who were classified as low and high in rebelliousness and low or high in impulsiveness (based on pre-test answers on a self-report measure) watched one of two types of anti-smoking advertisements: vulgar humor or realistic fear. They then reported on their perceptions of the ads and smoking related variables.</p> <p>It was hypothesized that participants with high rebelliousness would be more affected by the fear ads, and less likely to quit in response to them.</p>
Target Population	U.S. university students
Evaluation Design	<p>Experimental study using random assignment to one of two groups and one control group; samples from two U.S. universities and a junior college included 223 students, 65 of these were current smokers.</p> <p>Outcome variables were:</p> <ul style="list-style-type: none"> • Interest in the ads, smoking health-related perceptions, intention to quit smoking, positive perceptions of smoking. • Manipulation checks were used to confirm reactions to the anti-smoking ads
Outcomes	<p>Attitudes about the dangers of smoking were not associated with the type of add seen.</p> <p>Participants who were rebellious but low in impulsivity had more intention to quit when they saw the vulgar versus the fear ads.</p>
Limitations	<p>This is a laboratory study with university students that may have limited generalizability to real world conditions or other populations.</p> <p>Few smokers were in each of the categories, which limits the ability to interpret intention to quit data.</p> <p>This study relies on self-report data, which generally correlates to actual intentions, but rebellious participants may provide less reliable data.</p> <p>The rebellious and impulsive categorizations were somewhat artificial; participants who scored above average were classified as high in these characteristics.</p>

Lee, M. J., & Shin, M. (2011). Fear versus humor: The impact of sensation seeking on physiological, cognitive, and emotional responses to anti-alcohol abuse messages. *The Journal of Psychology*, 145(2), 73-92.

Intervention (including specific scare tactics or fear messages)	<p>Participants watched 8 30-second anti- drinking and driving PSAs that were categorized by the type of message: fear or humor. The fear message PSAs included both arrest and physical injury scenarios. These PSAs were presented in random sequences to each participant.</p> <p>This study investigated the differences in physiological, cognitive, and emotional responses to the PSAs. It also investigated the difference in reactions between participants classified as either high or low sensation seekers.</p>
Target Population	U.S. university students
Evaluation Design	<p>Experimental study with between and within subjects design; sample consisted of 71 college students (43 female, 25 male) with an average age 21. Study monitored participants' response through heart rate monitors, electrical measurement of facial muscles, and self-report measures.</p> <p>A manipulation check was used to confirm that the PSAs were associated with fear and humor responses.</p>
Outcomes	<p>Neither the fear nor the humor PSAs had any influence on intention to change alcohol use behaviors. High or low sensation seeking also did not have any influence on behavioral intention.</p> <p>The fear message PSAs resulted in stronger perceptions of the dangers of drinking and driving and higher interest levels than the humor PSAs.</p>
Limitations	<p>This is a laboratory study with university students that may have limited generalizability to real world conditions or other populations.</p> <p>The dose strength of PSA viewing used in this study may have been too low to affect behavioral intention. In a real world setting, individuals would ideally be exposed to the PSAs more frequently over weeks and months.</p>

Leshner, G., Bolls, P., & Thomas, E. (2009). Scare'em or disgust'em: The effects of graphic health promotion messages. *Health Communication*, 24(5), 447-458.

Intervention (including specific scare tactics or fear messages)	Participants watched 24 30-second anti-smoking PSAs from four different categories. PSAs were categorized by the use of a fear message (low or high) and disgust message (low or high). Fear messages involved negative physical consequences of tobacco use. Disgust messages showed images known to evoke disgust such as internal organs, wounds, and decaying material.
Target Population	Undergraduate students
Evaluation Design	Experimental study with 2x2 within subjects design; sample of 58 non-smoking undergraduate students. Participants' heart rates were monitored while viewing the PSAs as a measure of attention to the PSAs. Recognition exercises were administered post-viewing to test for the encoding of the information in the PSAs.
Outcomes	Participants' heart rates demonstrated increased attention while watching PSAs with high fear and disgust levels compared to PSAs with low levels. However, PSAs that had high levels of both fear and disgust were associated with heart rate patterns that suggest that they were paying less attention. This may indicate high levels of fear plus disgust leads to cognitive overload and results in disengagement. Participants had higher recognition of the PSAs with high fear and disgust levels compared to PSAs with low levels. However, PSAs that had high levels of both fear and disgust were associated with lower levels of recognition, suggesting lower levels of encoding.
Limitations	This is a laboratory study with university students that may have limited generalizability to real world conditions or other populations. Behavioral intention to use tobacco was not measured.

Moscato, S., Black, D. R., Blue, C. L., Mattson, M., Galer-Unti, R. A., & Coster, D. C. (2001). Evaluating a fear appeal message to reduce alcohol use among Greeks. *American Journal of Health Behavior*, 25(5), 481-491.

Intervention (including specific scare tactics or fear messages)	<p>Prior to a week of festivities associated with high alcohol use at a large U.S. university, a Community Standards panel comprised of university administration, the fraternal organization judicial board, a judge, and representatives from 8 law enforcement agencies was convened. 1,000 students attended.</p> <p>A consistent fear appeal message was conveyed that students found intoxicated or using alcohol underage will be arrested and prosecuted and that the events would be closely monitored during the week. Students were told that if they chose to drink they should reduce consumption and drink responsibly to remain unnoticed by law enforcement.</p>
Target Population	U.S. university student members of fraternities and sororities
Evaluation Design	<p>Non-experimental design; random sample, consisting of 224 undergraduate fraternal organization residents. Post-test after the festivities week.</p> <p>Primary outcomes were: self-reported drinking, arrests, and alcohol sales.</p>
Outcomes	<p>78% of those surveyed reported having heard the fear message, 58% directly at attendance at the panel and 42% secondhand. Participants who reported higher levels of fear associated with the message reported drinking less during the week.</p> <p>Arrests were lower this year in comparison to prior years. Alcohol sales remained stable.</p>
Limitations	<p>Variables in this study were not controlled and the study did not include a comparison group.</p> <p>The study relies primarily on self-report data, although this is triangulated with arrest and alcohol sales data.</p> <p>The article did not discuss how law enforcement activities during the festivities may have enhanced the salience of the fear message.</p>

Paek, H. J., Kim, K., & Hove, T. (2010). Content analysis of antismoking videos on YouTube: message sensation value, message appeals, and their relationships with viewer responses. *Health Education Research*, 25(6), 1085-1099.

Intervention (including specific scare tactics or fear messages)	Researchers identified and examined 934 anti-smoking video clips on YouTube were examined for the following characteristics: message sensation value (MSV) and three types of messages, those that evoke fear, those that evoke social themes (such as peer norms), and those that employ humor. These four characteristics were then linked to YouTube's interactive audience response mechanisms.
Target Population	YouTube users
Evaluation Design	Non-experimental, content analysis and descriptive study of anti-smoking video clips on YouTube; clips were rated for sensation value and type of message appeal; the different types of clips were then associated with view characteristics: the reach of the clip (how many times the clip was viewed), viewer engagement (number of comments posted), and viewer preference ratings (using the scale provided by YouTube).
Outcomes	<p>Fear appeals were most prevalent (56.8%), followed by humor (15.3%) and social (9.0%). There were significantly fewer humor appeals used for smoking cessation and secondhand smoke clips incorporated more humor.</p> <p>Fear appeals seem to capture attention and interest more than social appeals. On the other hand, humor appeals with high message sensation value were viewed less often and received lower ratings.</p>
Limitations	<p>A controlled experimental study may be needed to further investigate attitudinal and behavioral consequences related to anti-smoking videos on YouTube.</p> <p>Sample characteristics are not known.</p>

Santa, A. F., & Cochran, B. N. (2008). Does the impact of anti-drinking and driving public service announcements differ based on message type and viewer characteristics? *Journal of Drug Education*, 38(2), 109-129.

Intervention (including specific scare tactics or fear messages)	Participants watched 10 30-second anti-drinking and driving PSAs. PSAs that were categorized by the type of message: empathy, fear, or informational. These PSAs were presented in random sequences to each participant.
Target Population	U.S. undergraduate students and adult driving under the influence (DUI) offenders
Evaluation Design	Experimental study within subjects design; sample consisted of 137 undergraduate students and 17 participants from a community program for DUI offenders. The main outcomes were behavioral intentions related to drinking and driving.
Outcomes	<p>The empathy message PSAs were rated as most effective, the fear PSAs were second in effectiveness and the informational approach was rated as the least effective.</p> <p>Individuals with more drinking and driving experience reported that the PSAs regardless of type were less effective compared to individuals with less or no drinking and driving experience.</p> <p>Individuals with high sensation seeking characteristics perceived the PSAs as less effective, in particular the fear-based PSAs.</p>
Limitations	<p>The results of this study are limited because it is very difficult to isolate any one aspect of a message.</p> <p>Another limitation is that the outcome measure perceived effectiveness may not account for actual behavior change.</p> <p>Because social desirability scores emerged as predictor in some analyses, it is possible that participants provided the answers they thought were most socially desirable.</p> <p>This study was also limited by its use of self-report to assess past experience with DUI.</p>

Schoenbachler, D. D., & Whittler, T. E. (1996). Adolescent processing of social and physical threat communications. *Journal of Advertising*, 25(4), 37-54.

Intervention (including specific scare tactics or fear messages)	Participants were shown print public service announcements (PSAs) about the consequences of illicit drug use in adolescents. The PSAs were developed by an advertising agency and portrayed low, high, and medium levels of two types of fear messages: social threat (negative social consequences of drug use) and physical threat (injury or death from drug use). Participants viewed one type of PSA: either a social or physical threat PSA that was at the low, moderate or high level of threat.
Target Population	6th and 7th grade students
Evaluation Design	Experimental design with 371 student participants randomly assigned to one of six experimental conditions; pre- and post-tests assessed participants' emotional, cognitive, attitudinal and behavioral intentions to use illicit drugs.
Outcomes	Attitudes toward drug use were more negative after viewing the social threat PSA compared to the physical threat PSA. Participants who were high in sensation seeking had more negative attitudes toward the PSA and more positive attitudes toward drug use.
Limitations	This study may have limited generalization to real world conditions or different populations. Self-reported attitudes and behavioral intentions to use drugs were used, but actual use was not tracked or queried. The illicit drug was not named in this study. It is not clear if participants had in mind different types of drugs when answering questions and if this had an effect on their responses.

Schmitt, C. L., & Blass, T. (2008). Fear appeals revisited: Testing a unique anti-smoking film. *Current Psychology*, 27(2), 145-151.

Intervention (including specific scare tactics or fear messages)	<p>Participants watched one of two versions of an anti-smoking film developed by the American Lung Association. The high fear arousal condition presented the film about the diagnosis and physical decline from lung cancer of a high school teacher. The low fear arousal version presented an edited version of the film with the most disturbing sections deleted (such as x-rays of tumor-ridden lungs).</p> <p>Participants completed self-report measures after watching the film.</p>
Target Population	U.S. undergraduate students
Evaluation Design	<p>Participants randomly assigned to watch one of two film versions or to a control group that did not watch the film; sample consisted of 46 non-smoking university students.</p> <p>Outcomes were: attitudes toward smoking, behavioral intention to abstain, and intention to convince a smoker to quit.</p>
Outcomes	<p>A manipulation check of the two film versions revealed that there was no difference in the amount of fear generated between the two films.</p> <p>Participants who viewed the film were more likely to abstain from smoking and more likely to convince a smoker to quit than participants who did not watch the film.</p>
Limitations	<p>This is a laboratory study with university students that may have limited generalizability to real world conditions or other populations.</p> <p>Because the two versions of the film were similar in terms of the fear generated, this study cannot isolate the effects of a fear message. Rather, the outcomes reflect the effects of watching and anti-smoking film.</p>

Shehryar. O. & Hunt, D. M. (2005). A terror management perspective on the persuasiveness of fear appeals: A terror management perspective. *Journal of Consumer Psychology*, 15(4), 275-287.

Intervention (including specific scare tactics or fear messages)	<p>Participants who reported frequent and heavy alcohol use (“high-commitment” to drinking) and those who reported moderate to low alcohol use (“low commitment” to drinking) viewed print advertisements with fear messages that highlighted one of three negative consequences associated with drinking and driving: arrest, serious injury, or death.</p> <p>This study tested hypotheses related to Terror Management Theory (TMT), a theory that postulates that individuals will protect against reminders of their mortality by reconfirming sources of self-esteem. In this study, the source of self-esteem tested was a lifestyle of “high commitment” to drinking. The main hypothesis was that participants who reported “high commitment” to drinking and who viewed death-related advertisements would be significantly more likely to reject the message that drinking and driving has serious consequences compared to participants with similar patterns of alcohol use who saw the arrest and serious injury ads.</p>
Target Population	U.S. university students
Evaluation Design	<p>Experimental study using random assignment to one of three groups and one control group; sample consisted of 178 undergraduates students; self-report measures were used pre- and post-test. The primary outcome was message acceptance.</p> <p>A second study using the same methodology with 236 undergraduates replicated the results.</p>
Outcomes	<p>Participants with high-commitment to drinking who saw the death-related threat appeal were significantly more likely to reject the intended message in comparison to high-commitment participants who saw the arrest and serious injury appeals.</p> <p>Over all conditions the high-commitment to drinking participants were significantly more likely to reject the message than the low-commitment to drinking participants.</p>
Limitations	This is a laboratory study with university students that may have limited generalizability to real world conditions or other populations.

Sturges, J. W., & Rogers, R. W. (1996). Preventive health psychology from a developmental perspective: An extension of protection motivation theory. *Health Psychology*, 15(3), 158.

<p>Intervention (including specific scare tactics or fear messages)</p>	<p>Participants heard 10 minutes of audiotaped anti-tobacco use health messages and received identical written materials. The health messages were developed to have low and high fear messages and early or delayed consequences. High fear messages described personal serious health consequences (such as cancer) and low fear messages described general non-personalized consequences. Early onset consequence messages discussed how these effects start early in life. The delayed effects consequence messages described how the effects happen when a person is “old.”</p> <p>In addition the messages included two different types of coping messages. In the high coping messages, it was emphasized that not starting to smoke was the best protection against consequences. In the low coping condition the difficulty of staying away from tobacco and the possibility of poor health in any case was described.</p> <p>The messages for the children were edited to be at a more appropriate development level.</p>
<p>Target Population</p>	<p>Non-smoking children (4th and 5th graders), adolescents (9th and 10th graders), and young adults (undergraduate university students)</p>
<p>Evaluation Design</p>	<p>Experimental study with random assignment to one of the six groups; sample consisted of 112 children, 67 adolescents, and 73 university students.</p> <p>The main outcome was behavioral intention to avoid tobacco use.</p>
<p>Outcomes</p>	<p>Adolescents who heard the low fear/low coping messages reported high intentions to avoid using tobacco.</p> <p>Among children, adolescents and young adults, those who heard the high fear and high coping message were more likely to express behavioral intentions to avoid tobacco use than those who were in the other conditions.</p> <p>However, adolescents and young adults who heard the high fear/low coping messages reported less behavioral intention to avoid tobacco use. This is considered the “boomerang effect” in which too high levels of fear along with low coping skills leads to the opposite intention of the message.</p> <p>On the other hand, children were less affected by the low coping condition; when the threat was high they were significantly more likely to intend to avoid use.</p>
<p>Limitations</p>	<p>The sample may not have been representative:</p> <ol style="list-style-type: none"> 1) Children who had signed parental consent forms may differ from those who didn’t. 2) The two younger groups were from middle- to upper-income families. 3) College students may differ from peers who do not attend college.

Weber, K., Dillow, M. R., & Rocca, K. A. (2011). Developing and testing the anti-drinking and driving PSA. *Communication Quarterly*, 59(4), 415-427.

Intervention (including specific scare tactics or fear messages)	<p>Two studies were conducted. In Study 1, focus groups with undergraduate participants were conducted. Participants were asked to provide feedback about anti-drinking and driving public service announcements. The findings were then used to create a PSA based on themes presumed to be more effective for this population. Based on these themes, the PSA used a social fear approach versus a death/injury fear approach. The results of the focus group were taken to support the curvilinear hypothesis that low and high fear appeals were less effective than fear appeals in the mid- to high-range. High fear appeals may lead to defensive responses such as escape from the feared consequence by avoiding or denying the feared consequence.</p> <p>In Study 2, the newly created PSA was shown to participants who then completed post-test measures.</p>
Target Population	U.S. university students
Evaluation Design	<p>Study 1: six focus groups were conducted and resulting themes were analyzed.</p> <p>Study 2: Experimental design with random assignment and a control group that watched a control PSA; sample consisted of 371 undergraduate students. Participants completed pre-test measures about their sensation seeking characteristics and post-test measures about how they processed the PSA and the perceived sensation value of the PSA.</p>
Outcomes	<p>Study 1: focus group themes included: 1) outcomes and actions in the PSAs were considered unrealistic, and 2) fear about legal and social (e.g., arrest, embarrassment) consequences.</p> <p>Study 2: participants in the experimental group scored higher on cognitive processing compared to the control group.</p> <p>Study 2: High sensation seekers scored higher on cognitive processing after watching the created PSA compared to those who watched the control PSA.</p>
Limitations	<p>Study 2 was a laboratory study with university students that may have limited generalizability to real world conditions or other populations.</p> <p>The newly created PSA was not described in detail.</p>

Zimmerman, R. S., Cupp, P. K., Abadi, M., Donohew, R. L., Gray, C., Gordon, L., et al. (2014). The effects of framing and fear on ratings and impact of antimarijuana PSAs. *Substance Use & Misuse*, early online, 1-12.

Intervention (including specific scare tactics or fear messages)	<p>Participants watched five versions of one of four types of anti-marijuana public service announcements (PSAs) and reported on their attitudes toward and their intentions to use marijuana before and after viewing.</p> <p>The PSAs were classified as having a low or high fear message and as having either a loss or gain frame, resulting in the four categories of PSA types. A loss frame focuses on potential losses associated with a given behavior while a gain frame focuses on the potential benefits.</p>
Target Population	U.S. undergraduate university students
Evaluation Design	Experimental study using random assignment with a comparison control group; sample consisted of 243 freshman and sophomore undergraduate students. Pre- and post-test measured attitudes, behavioral intentions, and self-efficacy.
Outcomes	<p>PSAs with a moderate fear message and loss frames led to the largest fear response.</p> <p>Overall, participants who watched the anti-marijuana PSAs compared to the control group reported small, significantly lower positive attitudes toward marijuana and higher perceived severity of the consequences of marijuana use after watching the PSAs.</p> <p>However, PSAs with moderate fear/loss frame resulted in a small nearly-significant increase in positive attitudes toward marijuana, the opposite of the intended effect of the PSA. The PSAs with a moderate fear/gain frame resulted in a small decrease in positive attitudes toward marijuana.</p> <p>There were no significant changes to intention to use marijuana for any of the conditions.</p>
Limitations	<p>This is a laboratory study with university students that may have limited generalizability to real world conditions or other populations.</p> <p>The dose of the PSA was small (one approximately 2.5 minute segment times 5). In a real world setting, effects could be larger if individuals were exposed to the PSA more frequently over weeks and months.</p> <p>Many of the outcome variables were not significant. Attitudes toward marijuana was the one variable that did evidence change after PSA-viewing.</p>

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